# COMMODITIES PLANNING

# Key Lessons Learned

- **Commodities will be pushed forward before logistical structures are in place.**
- **The critical planning factor for ordering commodities is "distribution" capability, not people without power.**
- **Distribution planning must be a priority with local governments for the commodities mission to be successful.**
- **All levels of government must understand the distribution point concept.**

# Key Planning Factors

- Ice – 1 truck load (40,000 lbs, 8 lbs/per) serves 5000 people
- Water – 1 truck load (18,000 liters, 3+liters/per) serves 5000 people
- MREs – 1 truck load (21,744 ea., 2 ea/per) serves 10,000 people
- Tarps – 1 truck load (4,400 ea.) serves 4000 families with roof damage
- 1 car represents 1 family or 3 people
- Each car is provided the following:
  - **2 or 3 bags if ice**
  - **1 case of water (9-12 liters)**
  - **6 MREs**
  - **1 tarp, if they state they have roof damage**

# Key Planning Factors, Cont'd

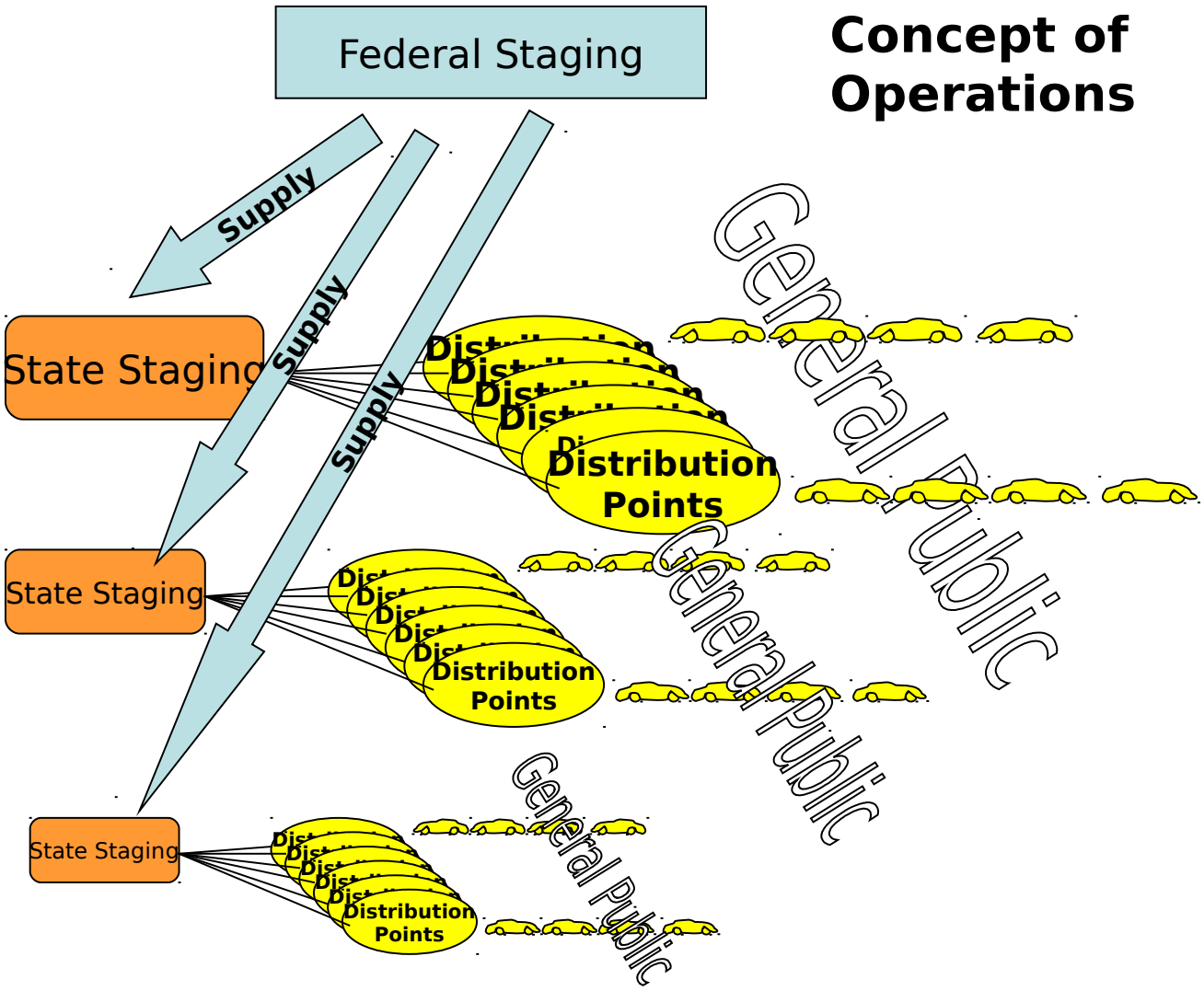
- A distribution point (DP) with one supply lane can serve 1,660 cars or 5000 people in one day, (Type III Distribution Point).
- A Type II DP has two lanes
- A Type I DP has four lanes

1 Truck Load Ice
1 Truck Load Water
½ Truck Load of MREs
1 Truck Load of Tarps

} Serves 5000 People = One Type III DP

IF 50 TRUCK LOADS OF ICE AND WATER ARE ORDERED PER DAY HOW MANY TYPE III DP'S ARE NEEDED?

# Concept of Operations



# LOADING POINT

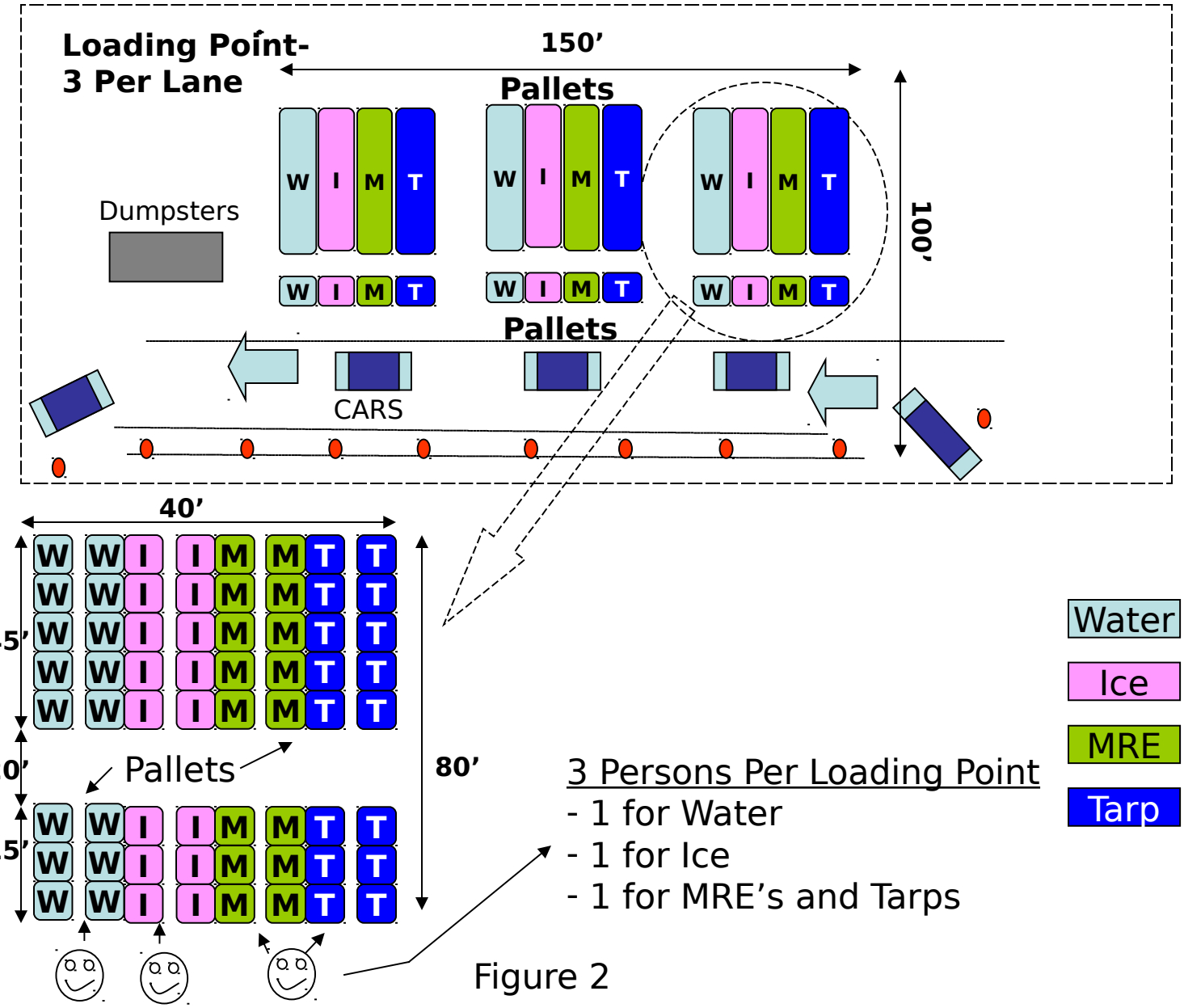
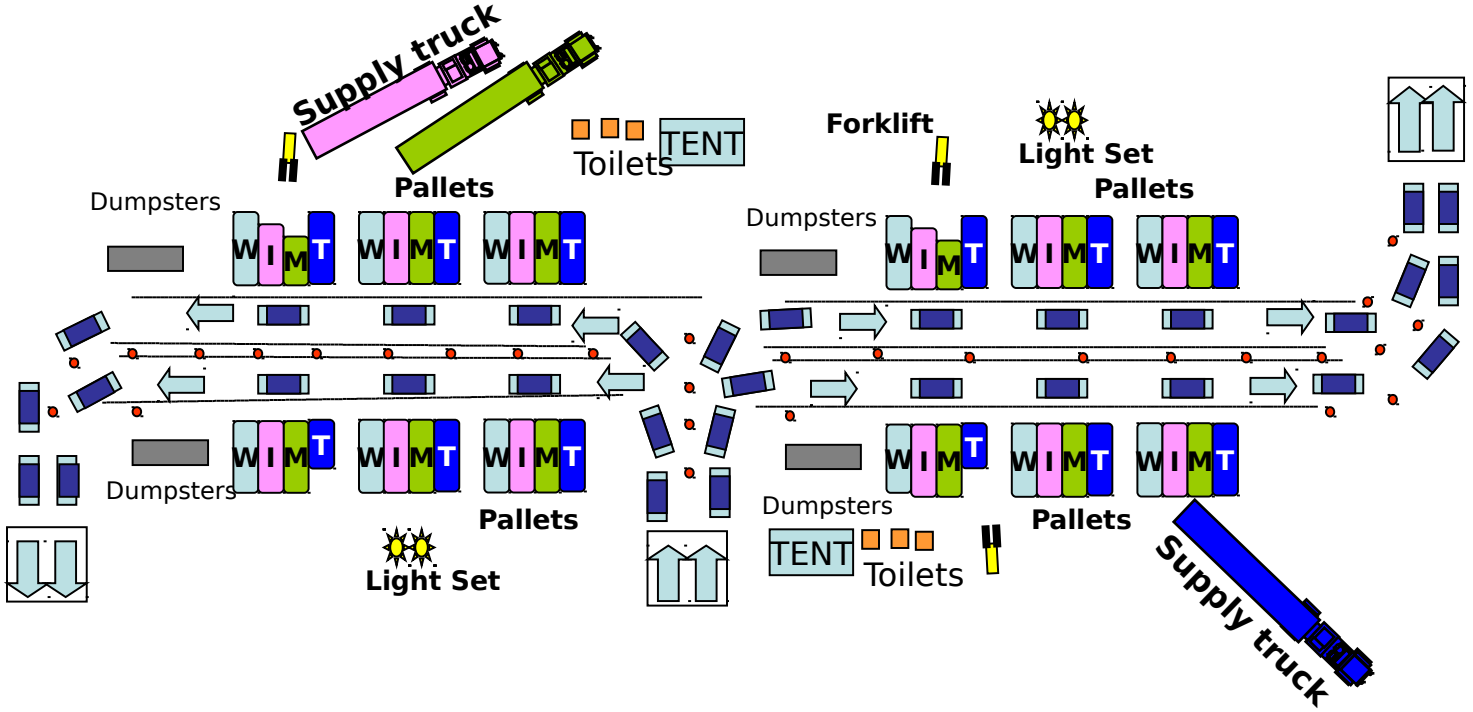



Figure 2

# TYPE I - DISTRIBUTION POINT

Serves 20,000 persons per day

12 Loading Points - 560 vehicles per hour




**Note: Individual vehicles drive through and Ice & water is loaded into their trunks. Recommend One case water, 2 or 3 bags of ice per vehicle and 6 MRE's.**

**Supply trucks for Ice, Water, MRE's and Tarps are to be off-loaded promptly and returned for re-supply.**

**Maximum Loads per Day – Type I**

| | |
|---|---|
| Water | 4 |
| Ice | 4 |
| MRE | 2 |
| Tarp | 2 |

Figure 3

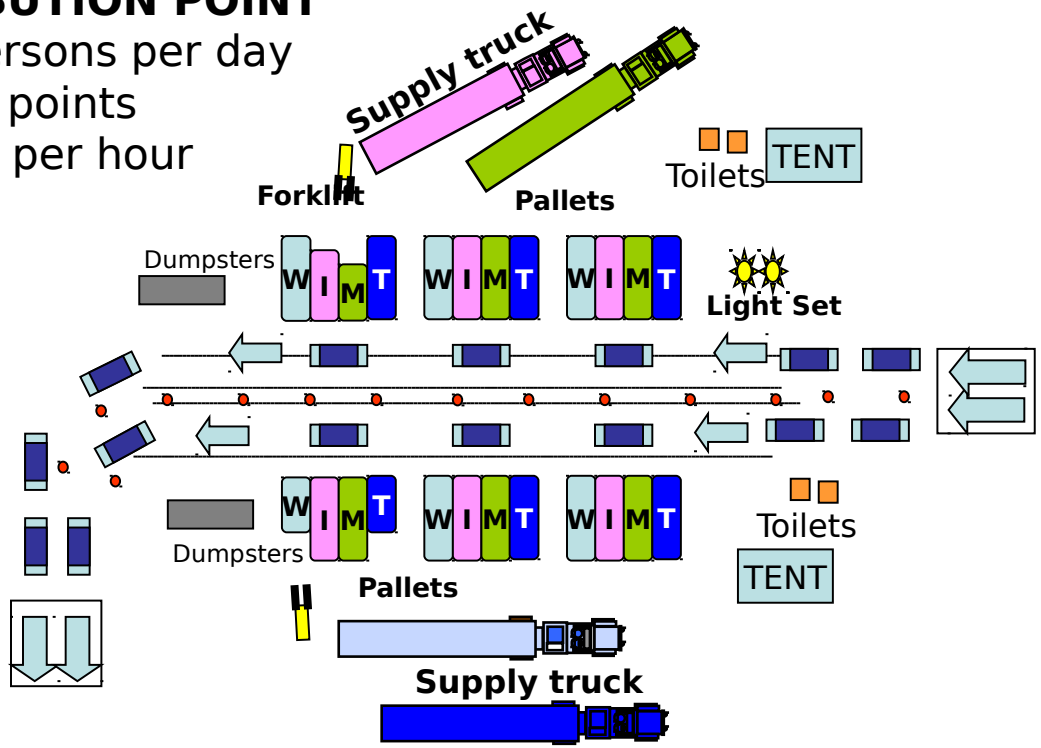
## Type I Distribution Point
## Resources Required

| Type I Distribution Point | | | | | |
|---|---|---|---|---|---|
| Manpower | | | | Equipment | |
| | Type | Day | Night | Type | Number |
| Local Responsibility | Manager | 1 | 0 | Forklifts | 3 |
| | Team Leader | 2 | 1 | Pallet Jacks | 3 |
| | Forklift Operator | 2 | 3 | Power Light Sets | 2 |
| | Labor | 57 | 4 | Toilets | 6 |
| | Loading Point 36 | | | Tents | 2 |
| | Back-up Loading PT 18 | | | Dumpsters | 4 |
| | Pallet Jacks Labor 3 | | | Traffic Cones | 30 |
| | Totals | 70 | 9 | Two-way radios | 4 |
| Others | Law Enforcement | 4 | 1 | | |
| | Community Rel. | 4 | 0 | | |
| Grand Total | | 78 | 10 | | |

Figure 4

# TYPE II - DISTRIBUTION POINT

Serves 10,000 persons per day
6 Loading points
280 vehicles per hour




**Maximum Loads per Day – Type II**

| | |
|---|---|
| Water | 2 |
| Ice | 2 |
| MRE | 1 |
| Tarp | 1 |

**Note: Individual vehicles drive through and Ice & water is loaded into their trunks. Recommend One case water, 2 or 3 bags of ice per vehicle and 6 MRE's**

**Supply trucks for Ice, Water, MRE's and Tarps are to be off-loaded promptly and returned for re-supply.**

Figure 5

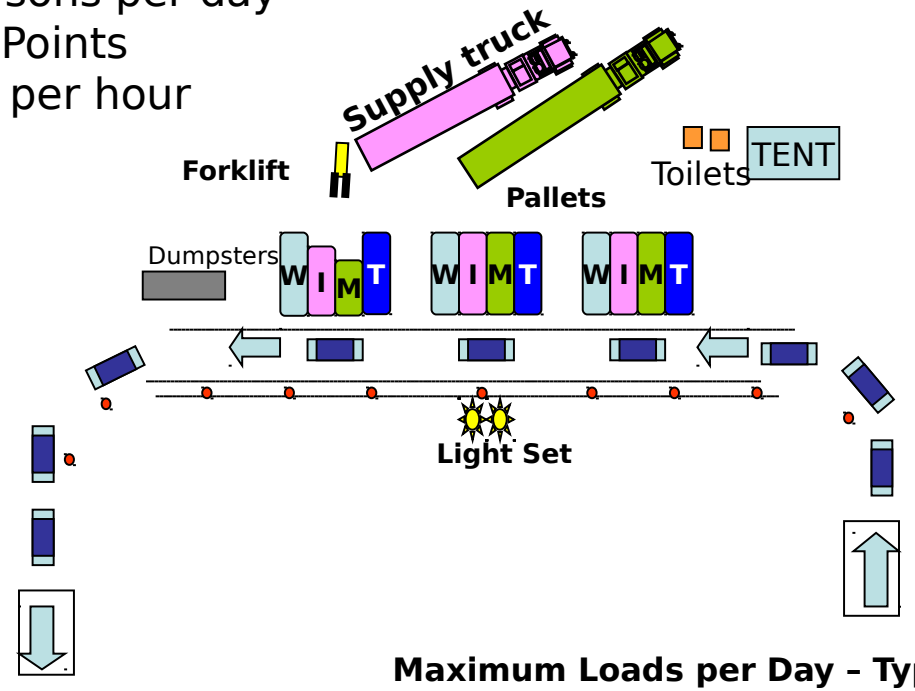
# Type II Distribution Point
# Resources Required

| Type II Distribution Point | | | | | |
|---|---|---|---|---|---|
| Manpower | | | | Equipment | |
| Type | | Day | Night | Type | Number |
| Local Responsibility | Team Leader | 1 | 0 | Forklifts | 2 |
| | Forklift Operator | 1 | 2 | Pallet Jacks | 2 |
| | Labor | 28 | 3 | Power Light Sets | 1 |
| | Loading PT 18 | | | Toilets | 4 |
| | Back-up Loading PT 9 | | | Tents | 2 |
| | Pallet Jacks Labor 1 | | | Dumpsters | 2 |
| | Totals | 30 | 5 | Traffic Cones | 15 |
| Others | Law Enforcement | 2 | 1 | Two-way radios | 0 |
| | Community Rel. | 2 | 0 | | |
| Grand Total | | 34 | 6 | | |

Figure 6

## TYPE III - DISTRIBUTION POINT

Serves 5,000 persons per day
3 loading Points
140 vehicles per hour




**Maximum Loads per Day – Type III**

| | |
|---|---|
| Water | 1 |
| Ice | 1 |
| MRE | 1/2 |
| Tarp | 1/2 |

**Note: Individual vehicles drive through and Ice & water is loaded into their trunks. Recommend One case water, 2 or 3 bags of ice per vehicle and 6 M**

**Supply trucks for Ice, Water, MRE's and Tarps are to be off-loaded promptly and returned for re-supply.**

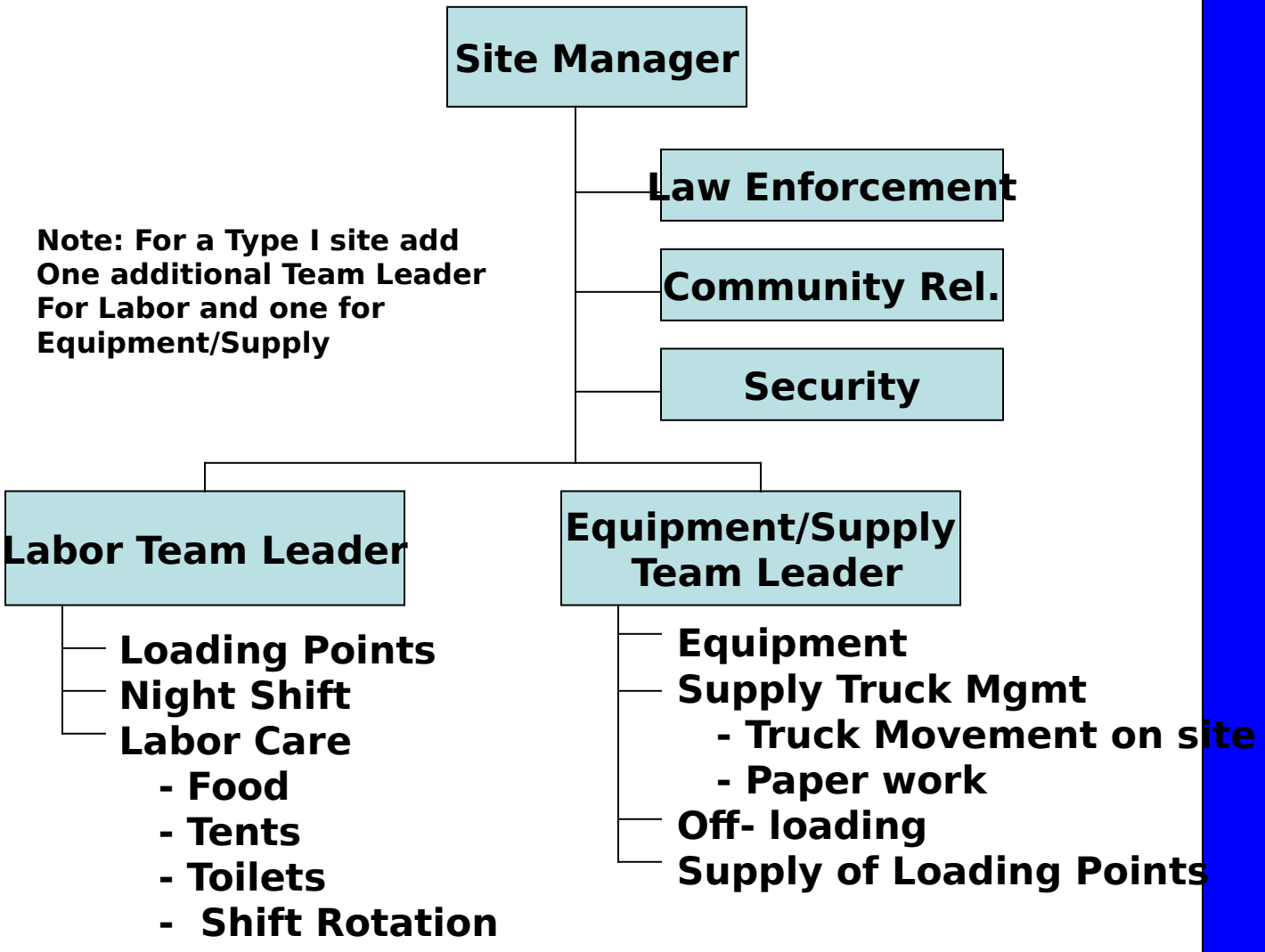
Figure 7

## Type III Distribution Point
## Resources Required

| Type III Distribution Point | | | | | | |
|---|---|---|---|---|---|---|
| Manpower | | | | | Equipment | |
| Type | | | Day | Night | Type | Number |
| Local Responsibility | Team Leader | | 1 | 0 | Forklifts | 1 |
| | Forklift Operator | | 1 | 1 | Pallet Jacks | 1 |
| | Labor | | 14 | 2 | Power Light Sets | 1 |
| | | Loading PT 9 | | | Toilets | 2 |
| | | Back-up Loading PT 4 | | | Tents | 1 |
| | | Pallet Jacks Labor 1 | | | Dumpsters | 1 |
| | Totals | | 16 | 3 | Traffic Cones | 10 |
| Others | Law Enforcement | | 2 | 1 | Two-way radios | 0 |
| | Community Rel. | | 1 | 0 | | |
| Grand Total | | | 19 | 4 | | |

Figure 8

# ORGANIZATION CHART – TYPE II AND III
# DISTRIBUTION POINT SITE MANAGEMENT



# Pre-Planning Model

| | |
|---|---|
| **Enter # of people without power** | 400,000 |
| (Equals number of customers x 3) | |
| **# of people requiring commodities** | 160,000 |
| **# of Type III Dist. Points Req'd** | 32 |

| | Type III Dist. Point | | | | |
|---|---|---|---|---|---|
| **Manpower** | **Day** | **Night** | | **Equipment** | |
| **Local Req.** | | | | Forklifts | 32 |
| Forklift Oper | 32 | 32 | | Pallet Jacks | 32 |
| Laborers | 480 | 64 | | Traff Cones | 320 |
| **Total** | **512** | **96** | | Light Sets | 32 |
| Law Enf | 64 | 32 | | Toilets | 64 |
| Comun Rel | 32 | 0 | | Tents | 32 |
| Grand Total | **608** | **128** | | Dumpsters | 32 |

| **Tarps** | |
|---|---|
| Loads | Each |
| **36** | 160,000 |

| **Number of truck loads required per day for 24 days** | | **Water** | | | **ICE** | | | **MREs** | |
|---|---|---|---|---|---|---|---|---|---|
| | Days | Loads | | K Gal | Loads | | K Pounds | Loads | Each |
| | 1 | 32 | | 152.0 | 32 | | 1280 | 16 | 347,904 |
| | 2 | 29 | | 139.0 | 29 | | 1170 | 15 | 326,160 |
| | 3 | 27 | | 125.9 | 27 | | 1061 | 13 | 288,263 |
| **72 Hour Planning Total >** | | 88 | | | 88 | | | 44 | |
| | 4 | 24 | | 112.9 | 24 | | 951 | 12 | 258,443 |
| | 5 | 21 | | 99.9 | 21 | | 841 | 11 | 228,623 |
| | 6 | 18 | | 86.9 | 18 | | 731 | 9.1 | 198,802 |
| | 7 | 16 | | 73.8 | 16 | | 622 | 7.8 | 168,982 |
| 60% Power back on-line > | **8** | 13 | | 60.8 | 13 | | 512 | 6.4 | 139,162 |
| | 9 | 12 | | 55.1 | 12 | | 464 | 5.8 | 126,115 |
| | 10 | 10 | | 49.4 | 10 | | 416 | 5.2 | 113,069 |
| | 11 | 9.2 | | 43.7 | 9.2 | | 368 | - | - |
| | 12 | 8.0 | | 38.0 | 8.0 | | 320 | - | - |
| | 13 | 6.8 | | 32.3 | 6.8 | | 272 | - | - |
| | 14 | 5.6 | | 26.6 | 5.6 | | 224 | - | - |
| | 15 | 4.4 | | 20.9 | 4.4 | | 176 | - | - |
| 90% Power back on-line > | **16** | 3.2 | | 15.2 | 3.2 | | 128 | - | - |
| | 17 | 2.8 | | 13.3 | 2.8 | | 112 | - | - |
| | 18 | 2.4 | | 11.4 | 2.4 | | 96 | - | - |
| | 19 | 2.0 | | 9.5 | 2.0 | | 80 | - | - |
| | 20 | 1.6 | | 7.6 | 1.6 | | 64 | - | - |
| | 21 | 1.2 | | 5.7 | 1.2 | | 48 | - | - |
| | 22 | 0.8 | | 3.8 | 0.8 | | 32 | - | - |
| | 23 | 0.4 | | 1.9 | 0.4 | | 16 | - | - |
| | 24 | 0.0 | | 0.0 | 0.0 | | 0 | - | - |
| **Total Loads** | | **249.6** | | **1185.6** | **249.6** | | **9984** | **101** | **2,195,523** |

| Enter Number of Type III Dist. Points to be used | 25 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| - 1 Type II = 2 Type III | | | | | | | | | |
| - 1 Type I = 4 Type III | | | | | | | | | |

# Post-Ordering Model

| Number of truck loads required | | Water | | ICE | | MREs | | Tarps | |
|---|---|---|---|---|---|---|---|---|---|
| per day for 24 days | Days | Loads | K Gal | Loads | K # | Loads | Each | Loads | Each |
| | 1 | 25 | 118.8 | 25 | 1000 | 13 | 271,800 | | |
| | 2 | 23 | 108.6 | 23 | 914 | 11 | 248,503 | | |
| | 3 | 21 | 98.4 | 21 | 829 | 10 | 225,206 | | |
| **Initial Order (72 Hour Planning Total) >** | | **69** | | **69** | | **34** | | **28** | **125,000** |
| | 4 | 19 | 88.2 | 19 | 743 | 9 | 201,909 | | |
| | 5 | 16 | 78.0 | 16 | 657 | 8 | 178,611 | | |
| | 6 | 14 | 67.9 | 14 | 571 | 7.1 | 155,314 | | |
| **Next Order (next 72 Hour Planning Total) >** | | **49** | | **49** | | **25** | | | |
| | 7 | 12 | 57.7 | 12 | 486 | 6.1 | 132,017 | | |
| 60% Power back on-line > | **8** | 10 | 47.5 | 10 | 400 | 5.0 | 108,720 | | |
| | 9 | 9 | 43.0 | 9 | 363 | 4.5 | 98,528 | | |
| | 10 | 8 | 38.6 | 8 | 325 | 4.1 | 88,335 | | |
| | 11 | 7.2 | 34.1 | 7.2 | 288 | - | - | | |
| | 12 | 6.3 | 29.7 | 6.3 | 250 | - | - | | |
| | 13 | 5.3 | 25.2 | 5.3 | 213 | - | - | | |
| | 14 | 4.4 | 20.8 | 4.4 | 175 | - | - | | |
| | 15 | 3.4 | 16.3 | 3.4 | 138 | - | - | | |
| 90% Power back on-line > | **16** | 2.5 | 11.9 | 2.5 | 100 | - | - | | |
| | 17 | 2.2 | 10.4 | 2.2 | 88 | - | - | | |
| | 18 | 1.9 | 8.9 | 1.9 | 75 | - | - | | |
| | 19 | 1.6 | 7.4 | 1.6 | 63 | - | - | | |
| | 20 | 1.3 | 5.9 | 1.3 | 50 | - | - | | |
| | 21 | 0.9 | 4.5 | 0.9 | 38 | - | - | | |
| | 22 | 0.6 | 3.0 | 0.6 | 25 | - | - | | |
| | 23 | 0.3 | 1.5 | 0.3 | 13 | - | - | | |
| | 24 | 0.0 | 0.0 | 0.0 | 0 | - | - | | |
| **Total Loads** | | **195.0** | **926.3** | **195.0** | **7800** | **79** | **1,708,943** | **28** | 125,000 |

# QUESTIONS